Citation:

McLean R, Connor J. Alcohol and injury: a survey in primary care settings. *N Z Med J.* 2009 Sep 25;122(1303):21-8.

PubMed ID: 19851417

Study Design:

Cross-sectional Survey

Class:

D - Click here for explanation of classification scheme.

Research Design and Implementation Rating:

NEUTRAL: See Research Design and Implementation Criteria Checklist below.

Research Purpose:

The survey was undertaken in order to investigate the association between alcohol use, drinking location and injury in Dunedin, New Zealand in order to better inform initiatives to reduce alcohol-related harm at Public Health South.

Inclusion Criteria:

- First presentation injury consultations
- 16 years and older
- Three primary care facilities in Dunedin
- 10 March 2008 to 30 April 2008 (inclusive)

Exclusion Criteria:

- If injury occurred more than 3 months prior to presentation
- Severely intoxicated at the time of the consultation and judged unable to give consent to participate

Description of Study Protocol:

Recruitment

Participants were identified by health care centre staff and were asked to complete an anonymous survey at the same time they were completing their Accident Compensation Corporation (ACC) paperwork.

Design: Cross-sectional survey

Participants could choose to complete an anonymous survey.

Blinding used (if applicable): not noted.

Intervention (if applicable): not applicable.

Statistical Analysis

- Chi-squared tests were conducted to determine the statistical significance of associations between having had a drink in the 6 hours prior to injury and employment status or sex.
- A t-test was conducted to test the hypothesis that there was no difference in age between those who had a drink in the previous 6 hours, and those who had not.
- A Chi-squared test was used to test the association between hazardous alcohol intake and 'attributing your injury to alcohol intake', and hazardous alcohol intake and place of last drink.

Data Collection Summary:

Timing of Measurements

10 March 2008 to 30 April 2008 (inclusive).

Dependent Variables

- Reported injuries: reported on survey

Independent Variables

- Level of alcohol intake: reported on survey

Control Variables

- Sex (female, male)
- Injury attributed to alcohol (yes, no)
- Place of last drink (pub bar or nightclub, house or flat, other)

Description of Actual Data Sample:

Initial N: not stated

Attrition (final N): a total of 317 eligible surveys were obtained. The overall response rate was 71%.

Age, Ethnicity, Other relevant demographics and Anthropometrics:

Total number of responses		Number 317
Sex	Female	99
	Male	167
Ethnicity	New Zealand European	275
	Maori	17

	Pacific	7
	Asian	8
	Other	22
Age (years)	Range	16-84
	Mean	32
	Median	26
Employment status	In paid employment	166
	School student	15
	Tertiary student	90
	Other	35
Injury type	Fracture or dislocation	19
	Sprain or strain	114
	Open wound/laceration	68
	Contusion or crush injury	61
	Burn	3
	Concussion	2
	Conjunctival foreign body	20
	Other	9
Alcoholic drink in the 6 hours prior to injury	Yes	53
	No	260

Location: Dunedin, New Zealand

Summary of Results:

Key Findings

- 17% of people aged 16 and over presenting to the three practices had an alcoholic drink in the 6 hours prior to injury. Of this group, 36% had had moderate intake of alcohol and 64% a hazardous intake according to the ALAC criteria for the maximum number of standard drinks on one drinking occasion of 4 for women and 6 for men.

- The mean number of standard drinks recalled by drinkers in this survey was 9.
- Tertiary students and young people were more likely to have been drinking than others, and a greater proportion of women (24%) had been drinking prior to injury than men (11%).
- The majority of drinkers (62%) had their last drink at a house or flat.

Characteristics of respondents and injuries, by drinking status

Variables		Drink in the previous 6 hr Yes	Drink in the previous 6 hr No	Total	Significance P value
Sex	Female	24(24%)	75	99	0.005
	Male	18(11%)	145	163	
Employment status	Paid employment	11(8%)	128	139	<0.001
	School student	2(14%)	12	14	
	Tertiary student	26(38%)	42	68	
	Other	2(7%)	29	31	
Age	Mean age	21.2(19.6-22.8)	34.7 (32.8-36.6)		<0.0001

Comparison of people with moderate versus hazardous alcohol intake prior to injury

Variables		Moderate Intake	Hazardous Intake	Total	Test of association (x^2)
Attribute injury to alcohol	Yes	3	19	22	P=0.002
	No	13	9	21	
Place of last drink	Pub bar or nightclub	2	12	14	P=0.122

Author Conclusion:

These results provide new information with respect to the role of drinking location in alcohol-related harm, in particular the important role of drinking in private homes. This study also

demonstrates the association between alcohol and injury in primary care settings in New Zealand.

Reviewer Comments:

Noted study limitations:

- *Participants did not comprise a representative sample of the Dunedin population, or of all those presenting to primary care with injury.*
- *There are number of potential sources of bias. The information was based on self report.*
- *Different systems of recruitment were used in each of the three locations.*
- *The timing of the survey did not include known events likely to increase alcohol consumption in the community.*

Research Design and Implementation Criteria Checklist: Primary Research

Relevance Questions		
1.	Would implementing the studied intervention or procedure (if found successful) result in improved outcomes for the patients/clients/population group? (Not Applicable for some epidemiological studies)	N/A
2.	Did the authors study an outcome (dependent variable) or topic that the patients/clients/population group would care about?	Yes
3.	Is the focus of the intervention or procedure (independent variable) or topic of study a common issue of concern to nutrition or dietetics practice?	Yes
4.	Is the intervention or procedure feasible? (NA for some epidemiological studies)	N/A

Validity Questions		
1.	**Was the research question clearly stated?**	Yes
1.1.	Was (were) the specific intervention(s) or procedure(s) [independent variable(s)] identified?	Yes
1.2.	Was (were) the outcome(s) [dependent variable(s)] clearly indicated?	Yes
1.3.	Were the target population and setting specified?	Yes
2.	**Was the selection of study subjects/patients free from bias?**	No
2.1.	Were inclusion/exclusion criteria specified (e.g., risk, point in disease progression, diagnostic or prognosis criteria), and with sufficient detail and without omitting criteria critical to the study?	No
2.2.	Were criteria applied equally to all study groups?	???

2.3.	Were health, demographics, and other characteristics of subjects described?	Yes
2.4.	Were the subjects/patients a representative sample of the relevant population?	???
3.	**Were study groups comparable?**	Yes
3.1.	Was the method of assigning subjects/patients to groups described and unbiased? (Method of randomization identified if RCT)	Yes
3.2.	Were distribution of disease status, prognostic factors, and other factors (e.g., demographics) similar across study groups at baseline?	Yes
3.3.	Were concurrent controls used? (Concurrent preferred over historical controls.)	N/A
3.4.	If cohort study or cross-sectional study, were groups comparable on important confounding factors and/or were preexisting differences accounted for by using appropriate adjustments in statistical analysis?	Yes
3.5.	If case control or cross-sectional study, were potential confounding factors comparable for cases and controls? (If case series or trial with subjects serving as own control, this criterion is not applicable. Criterion may not be applicable in some cross-sectional studies.)	Yes
3.6.	If diagnostic test, was there an independent blind comparison with an appropriate reference standard (e.g., "gold standard")?	N/A
4.	**Was method of handling withdrawals described?**	No
4.1.	Were follow-up methods described and the same for all groups?	N/A
4.2.	Was the number, characteristics of withdrawals (i.e., dropouts, lost to follow up, attrition rate) and/or response rate (cross-sectional studies) described for each group? (Follow up goal for a strong study is 80%.)	???
4.3.	Were all enrolled subjects/patients (in the original sample) accounted for?	No
4.4.	Were reasons for withdrawals similar across groups?	???
4.5.	If diagnostic test, was decision to perform reference test not dependent on results of test under study?	N/A
5.	**Was blinding used to prevent introduction of bias?**	N/A
5.1.	In intervention study, were subjects, clinicians/practitioners, and investigators blinded to treatment group, as appropriate?	N/A
5.2.	Were data collectors blinded for outcomes assessment? (If outcome is measured using an objective test, such as a lab value, this criterion is assumed to be met.)	N/A

5.3.	In cohort study or cross-sectional study, were measurements of outcomes and risk factors blinded?	N/A
5.4.	In case control study, was case definition explicit and case ascertainment not influenced by exposure status?	N/A
5.5.	In diagnostic study, were test results blinded to patient history and other test results?	N/A
6.	**Were intervention/therapeutic regimens/exposure factor or procedure and any comparison(s) described in detail? Were interveningfactors described?**	Yes
6.1.	In RCT or other intervention trial, were protocols described for all regimens studied?	N/A
6.2.	In observational study, were interventions, study settings, and clinicians/provider described?	Yes
6.3.	Was the intensity and duration of the intervention or exposure factor sufficient to produce a meaningful effect?	N/A
6.4.	Was the amount of exposure and, if relevant, subject/patient compliance measured?	N/A
6.5.	Were co-interventions (e.g., ancillary treatments, other therapies) described?	N/A
6.6.	Were extra or unplanned treatments described?	N/A
6.7.	Was the information for 6.4, 6.5, and 6.6 assessed the same way for all groups?	N/A
6.8.	In diagnostic study, were details of test administration and replication sufficient?	N/A
7.	**Were outcomes clearly defined and the measurements valid and reliable?**	???
7.1.	Were primary and secondary endpoints described and relevant to the question?	N/A
7.2.	Were nutrition measures appropriate to question and outcomes of concern?	Yes
7.3.	Was the period of follow-up long enough for important outcome(s) to occur?	N/A
7.4.	Were the observations and measurements based on standard, valid, and reliable data collection instruments/tests/procedures?	???
7.5.	Was the measurement of effect at an appropriate level of precision?	???
7.6.	Were other factors accounted for (measured) that could affect outcomes?	???
7.7.	Were the measurements conducted consistently across groups?	Yes
8.	**Was the statistical analysis appropriate for the study design and type of outcome indicators?**	Yes

8.1.	Were statistical analyses adequately described and the results reported appropriately?	Yes
8.2.	Were correct statistical tests used and assumptions of test not violated?	Yes
8.3.	Were statistics reported with levels of significance and/or confidence intervals?	Yes
8.4.	Was "intent to treat" analysis of outcomes done (and as appropriate, was there an analysis of outcomes for those maximally exposed or a dose-response analysis)?	N/A
8.5.	Were adequate adjustments made for effects of confounding factors that might have affected the outcomes (e.g., multivariate analyses)?	Yes
8.6.	Was clinical significance as well as statistical significance reported?	Yes
8.7.	If negative findings, was a power calculation reported to address type 2 error?	N/A
9.	**Are conclusions supported by results with biases and limitations taken into consideration?**	Yes
9.1.	Is there a discussion of findings?	Yes
9.2.	Are biases and study limitations identified and discussed?	Yes
10.	**Is bias due to study's funding or sponsorship unlikely?**	Yes
10.1.	Were sources of funding and investigators' affiliations described?	???
10.2.	Was the study free from apparent conflict of interest?	Yes